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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference MIT261002P	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. **PCT**/AU2005/000315	International filing date *(day/month/year)* 8 March 2005	Priority date *(day/month/year)* 8 March 2004

International Patent Classification (IPC) or national classification and IPC

Int. Cl.

A47D 9/00 (2006.01) ***A47D 7/00*** (2006.01) ***A47D 9/02*** (2006.01)

Applicant

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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. [X] *(sent to the applicant and to the International Bureau)* a total of **5** sheets, as follows:
      - [ ] sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      - [ ] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. [ ] *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

[X]	Box No. I	Basis of the report
[ ]	Box No. II	Priority
[ ]	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
[ ]	Box No. IV	Lack of unity of invention
[X]	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
[ ]	Box No. VI	Certain documents cited
[ ]	Box No. VII	Certain defects in the international application
[ ]	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
6 January 2006	01 February 2006
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **R. WEBER** Telephone No. (02) 6283 2546

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/AU2005/000315

Box No. I Basis of the report

1. With regard to the **language,** this report is based on:

[X] The international application in the language in which it was filed

[ ] A translation of the international application into , which is the language of a translation furnished for the purposes of:

- [ ] international search (under Rules 12.3(a) and 23.1 (b))
- [ ] publication of the international application (under Rule 12.4(a))
- [ ] international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

[ ] the international application as originally filed/furnished

[X] the description:

pages **1, 3, 4 and 6 to 12** as originally filed/furnished
pages* **2 and 5** received by this Authority on **6 January 2006** with the letter of 5 **January 2006.**
pages* received by this Authority on with the letter of

[X] the claims:

pages as originally filed/furnished
pages* as amended (together with any statement) under Article 19
pages* **13, 14, 15** received by this Authority on **6 January 2006** with the letter of 5 **January 2006.**
pages* received by this Authority on with the letter of

[X] the drawings:

pages **1 to 4** as originally filed/furnished
pages* received by this Authority on with the letter of
pages* received by this Authority on with the letter of

[ ] a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. [ ] The amendments have resulted in the cancellation of:

- [ ] the description, pages
- [ ] the claims, Nos.
- [ ] the drawings, sheets/figs
- [ ] the sequence listing *(specify)*:
- [ ] any table(s) related to the sequence listing *(specify)*:

4. [ ] This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- [ ] the description, pages
- [ ] the claims, Nos.
- [ ] the drawings, sheets/figs
- [ ] the sequence listing *(specify)*:
- [ ] any table(s) related to the sequence listing *(specify)*:

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	**1 to 27.**	**YES**
	Claims		**NO**
Inventive step (IS)	Claims	**1 to 27.**	**YES**
	Claims		**NO**
Industrial applicability (IA)	Claims	**1 to 27.**	**YES**
	Claims		**NO**

2. Citations and explanations (Rule 70.7)

Novelty (N) and Inventive Step (IS) Claims 1 to 27.

The invention as defined in the amended claims is directed to a an apparatus for moving or rocking an infant enclosure of the type having legs by which said enclosure is normally supported on an underlying surface, said apparatus comprises a plurality of support means associated with respective said legs, at least one of said support means including or being associated with motion imparting means for imparting a substantially vertical oscillating or reciprocating motion to said enclosure, and means for selectively actuating said motion imparting means. No individual citation or obvious combination of citations discloses these features. The closest art may be seen in the following documents:- US 3802003 A and US 4793010 A.

Industrial Applicability (IA) Claims 1 to 27.

All claims are considered to be industrially applicable.

adapted to be associated with respective said legs, at least one of said support means including or being associated with motion imparting means for imparting a substantially vertical oscillating or reciprocating motion to said enclosure, and means for selectively actuating said motion imparting means.

The support means may be interposed between the legs and the underlying surface or may be incorporated in the legs.

The term "infant enclosure" as used throughout the specification includes prams, strollers or other mobile baby or infant carrier which usually have at least a three-point support defined by respective legs. Most commonly prams, strollers or other mobile carriers have at least three or four legs terminating in respective wheels defining a three- or four-point support. The term "infant enclosure" also includes stationary enclosures such as cots or beds having at least two legs. Typically cots or beds have four legs providing a four point support however cots or beds may only have two legs which for example provide a continuous support along opposite sides or ends of the enclosure. The term "infant enclosure" further includes stands for cots, beds, bassinets or the like which usually have at least a three point support, four example three or more legs.

The term "legs" as used throughout the specification includes any form of support by which the enclosure can be supported on an underlying support surface and includes legs provided with wheels, rollers or casters.

The motion whilst primarily a vertical or substantially vertical motion however may also include a component in a horizontal plane. The oscillating or reciprocating motion may comprise a constant motion or variable motion. The oscillating or reciprocating motion may be a motion of constant amplitude or variable amplitude. The oscillating or reciprocating motion may be a motion of fixed rate or variable rate.

In a preferred form, one or more of the support means comprises active support means and includes or is associated with the motion imparting means. Other of the support means suitably comprise passive support means which include means for facilitating the continuation of motion in the enclosure imparted by said motion imparting means. The means for facilitating the continuation of motion in the enclosure may comprise springs or other resilient or elastic means associated with one or more of the other support means. Thus the resilient support means may be defined by or include springs, pads of resiliently

The actuator of the active support means may be mounted on the socket or saddle whereby actuation thereof imparts an oscillating or reciprocating movement to the socket. Where the actuator is a solenoid actuator having a first member movable relative to a second member, one of the members may be connected to the socket. The member may be directly connected to the socket such that movement thereof when the solenoid actuator is actuated causes a corresponding movement of the socket. Alternatively the solenoid actuator may be supported by the socket such that actuation thereof causes a movement of the socket against the resilient support.

Preferably the solenoid members comprise an armature and a coil. The armature of the solenoid is preferably rigidly connected to the socket and suitably is oriented substantially vertically. Thus when current is applied to the coil the coil moves relative to the armature. Preferably the coil moves substantially vertically along the armature. When current is removed from the coil, the coil suitably drops under the influence of gravity. Preferably the momentum of the coil causes partial compression of the resilient support. Most preferably the coil is weighted. Means may be provided to cushion movement of the coil. Such means may comprise one or more springs which may be connected between the coil and armature.

The active module suitably include control means to control the supply of current to the solenoid coil. Preferably the supply of current is a momentary supply of current such as a pulsed current supply. The control means suitably also includes means for selecting the time for which the current is supplied to the solenoid coil. The control means also includes means for selecting the rate at which the pulsed current is supplied to the solenoid coil. A remote control unit may be associated with the control means for remote control of the active module.

Brief Description of the Drawings

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention and wherein :-

Fig. 1 illustrates one form of rocking apparatus according to an embodiment of the invention associated with a cot;

Fig. 2 illustrates a passive module of the rocking apparatus of Fig. 1;

Fig. 3 illustrates an active module of the rocking apparatus of Fig. 1 with associated remote control unit;

Claims

1. Apparatus for moving or rocking an infant enclosure of the type having legs by which said enclosure is normally supported on an underlying surface, said apparatus comprising a plurality of support means associated with respective said legs, at least one of said support means including or being associated with motion imparting means for imparting a substantially vertical oscillating or reciprocating motion to said enclosure, and means for selectively actuating said motion imparting means.

2. Apparatus as claimed in claim 1 wherein said oscillating or reciprocating motion comprises a constant motion or variable motion.

3. Apparatus as claimed in claim 1 wherein one or more of said support means comprises active support means and includes or is associated with the motion imparting means.

4. Apparatus as claimed in claim 3 wherein others of said support means comprise passive support means and include means for facilitating the continuation of motion in the enclosure.

5. Apparatus as claimed in claim 4 wherein said means for facilitating the continuation of motion in the enclosure comprise resilient or elastic means.

6. Apparatus as claimed in claim 5 wherein said resilient means comprise springs.

7. Apparatus as claimed in any one of the preceding claims wherein said motion imparting means comprises an actuator.

8. Apparatus as claimed in claim 7 wherein said actuator comprise a vibratory actuator.

9. Apparatus as claimed in claim 7 or claim 8 wherein said actuator includes a member which when actuated imparts a vertical or substantially vertical reciprocating or oscillating motion to the leg of the enclosure associated with the at least one support means.

10. Apparatus according to any one of claims 7 to 9 wherein said actuator includes an actuator member which may be selectively reciprocated or oscillated.

11. Apparatus as claimed in claim 10 wherein said actuator member is oriented in use substantially vertically such as to induce at least a vertical reciprocation or oscillation of the leg of the enclosure associated with the at least one support means.

12. Apparatus as claimed in claim 10 or claim 11 wherein said actuator comprises a solenoid actuator and wherein said actuator member comprises the solenoid coil of the actuator or armature or an extension of the armature of the actuator.

13. Apparatus as claimed in any one of claims 7 to 9 wherein said actuator includes a rotatable actuator member.

14. Apparatus as claimed in claim 4 wherein said support means comprise support modules on or in which respective legs of the enclosure are supported.

15. Apparatus as claimed in claim 14 wherein said support modules include a socket or saddle for receiving a leg of the enclosure.

16. Apparatus as claimed in claim 15 wherein said socket or saddle is supported by resilient means for resilient movement.

17. Apparatus as claimed in claim 16 wherein said resilient means comprises a compression spring.

18. Apparatus as claimed in claim 17 wherein said support module includes a housing housing said spring.

19. Apparatus as claimed in any one of claims 15 to 18 wherein at least one of said support modules comprises an active support module and wherein said motion imparting means comprises an actuator mounted on said socket or saddle of the or each said active support module.

20. Apparatus as claimed in claim 19 wherein said actuator comprises a solenoid actuator having first and second members, said first member being movable relative to said second member and wherein one of the members of the actuator is connected to the socket.

21. Apparatus as claimed in claim 20 wherein said one member is directly connected to the socket such that movement thereof when the solenoid actuator is actuated causes a corresponding movement of the socket.

22. Apparatus as claimed in claim 20 wherein said solenoid actuator is supported by the socket.

23. Apparatus as claimed in claim 22 wherein said solenoid members comprise an armature and a coil.

24. Apparatus as claimed in claim 23 wherein the armature of the solenoid is rigidly connected to the socket and oriented substantially vertically whereby current applied to said coil causes said coil to move substantially vertically along the armature.

25. Apparatus as claimed in claim 24 wherein said coil is weighted.

26. Apparatus as claimed in claim 24 or claim 25 and including springs for cushioning movement of the coil.

27. Apparatus as claimed in any one of claims 23 to 26 wherein said active module includes control means to control the supply of current to the solenoid coil.